AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1.(Currently Amended) A silane-terminated polyurethane composition comprising the reaction product of:

a) a silane-terminated polyurethane prepolymer component;

b) a silane-terminated monomeric diisocyanate component; and

c) optionally a trisilane, [[or]] a tetrasilane, or a silane adduct component.

2. (Currently Amended) The silane-terminated polyurethane composition of claim 1, wherein:

a) the silane-terminated polyurethane prepolymer component comprises at least one of:

i) a prepolymer reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of about 1.1:1 to about 2:1, said prepolymer reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; or

ii) a prepolymer reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of about 0.5:1 to about 0.9:1, said prepolymer reaction

product terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1;

b) the silane-terminated monomeric diisocyanate component comprises at least one monomeric diisocyanate fully reacted with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; and

c) the optional ~~trisilane or tetrasilane~~ component comprises at least one of a polyether trisilane component, a polyether tetrasilane component, or a low molecular weight silane adduct~~ comprising at least one of a trisilane adduct or a tetrasilane adduct~~.

3. (Withdrawn) The silane-terminated polyurethane composition of claim 2, wherein the mercaptosilane comprises (3-mercaptopropyl)trimethoxysilane.

4. (Withdrawn) The silane-terminated polyurethane composition of claim 2, wherein the polyether trisilane component comprises at least one of:

a) the reaction product of at least one polyether triol terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; or

b) the multifunctional reaction product of at least one polyether triol terminated with at least one diisocyanate with a mole ratio of isocyanate groups to hydroxy groups of about 1.5:1 to about 2:1, said multifunctional reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1.

5. (Withdrawn) The silane-terminated polyurethane composition of claim 2, wherein the polyether tetrasilane component comprises at least one of:

a) the reaction product of at least one polyether tetraol terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; or

b) the multifunctional reaction product of at least one polyether tetraol terminated with at least one diisocyanate with a mole ratio of isocyanate groups to hydroxy groups of about 1.5:1 to about 2:1, said multifunctional reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

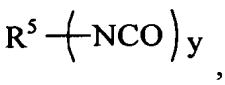
wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1.

6. (Original) The silane-terminated polyurethane composition of claim 2, wherein the low molecular weight silane adduct comprises the reaction product of at least one of:

a) i) at least one of $HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or

$R^7\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$ and

ii) at least one of:



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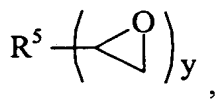

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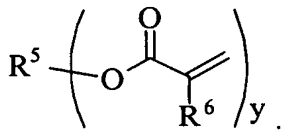

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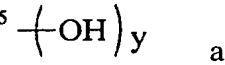
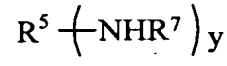
b)  and $OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$;

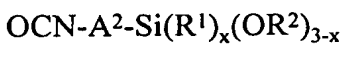
c) i) at least one of:



, or

$[(R^2O)_{3-x}(R^1)_xSi\text{-}A^1\text{-}]_2NH$, and

ii) at least one of:



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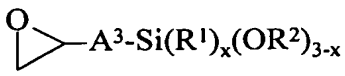

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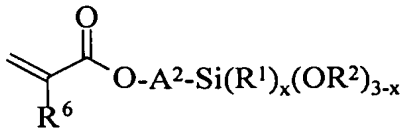
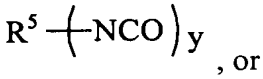


;

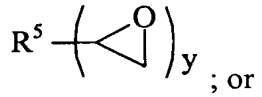
d) i) $[(R^2O)_{3-x}(R^1)_xSi\text{-}A^1\text{-}]_2NH$ and

ii) a diisocyanate;

e) i) a polyether triamine and ii) at least one of:



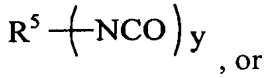
, or



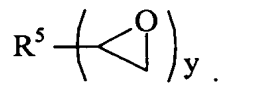
; or

f) at least one of:

i) diethylenetriamine or triethylenetetramine, and ii) at least one of:



, or



;

wherein A^2 represents a C_1 to C_6 linear, or branched alkylene group; A^3 represents a C_1 to C_{10} linear, branched or cyclic alkylene group optionally interrupted with one or more ether oxygen atoms; R^5 represents a branched aliphatic hydrocarbon residue, a branched aliphatic ether residue, or an alkyl-substituted isocyanurate residue; R^6

represents H or a CH_3 group; R^7 represents H, a C_1 to C_{10} alkyl group, a group having the formula $-A^1-Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)-CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; x is 0 or 1; and y is 3 or 4.

7. (Original) The silane-terminated polyurethane composition of claim 2, wherein the at least one polyol is selected from the group consisting of polyether polyols, polyester polyols, and combinations thereof.

8. (Original) The silane-terminated polyurethane composition of claim 2, wherein the at least one polyol is selected from the group consisting of polypropylene glycols, polytetramethylene glycols, polyoxyalkylene diols and triols, polycaprolactone diols and triols, and combinations thereof.

9. (Original) The silane-terminated polyurethane composition of claim 2, wherein the at least one polyol is selected from the group consisting of polyethylene glycols, polypropylene glycols, polytetramethylene glycols, polyethers prepared by the copolymerization of cyclic ethers selected from the group consisting of ethylene oxide, propylene oxide, trimethylene oxide, tetrahydrofuran, and mixtures of these cyclic ethers, with aliphatic polyols selected from the group consisting of ethylene glycol, 1,3-butanediol, diethylene glycol, dipropylene glycol, 1,2-propylene glycol, l,3-propylene glycol, 1,4-butylene glycol, and mixtures of these polyols, and combinations selected from this group of glycols and polyethers.

10. (Original) The silane-terminated polyurethane composition of claim 2, wherein each diisocyanate is selected from the group consisting of hexamethylene diisocyanate (HDI), 4,4'-diphenylmethane diisocyanate (MDI), 2,4'-diphenylmethane diisocyanate, blends of 4,4'-diphenylmethane diisocyanate (MDI) with 2,4'-diphenylmethane diisocyanate, 2,4-toluene diisocyanate (TDI), 2,6-toluene diisocyanate, blends of 2,4-toluene diisocyanate (TDI) with 2,6-toluene diisocyanate, 1-isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane (IPDI), dicyclohexylmethane-4,4'-diisocyanate, and combinations thereof.

11. (Original) The silane-terminated polyurethane composition of claim 2, wherein each diisocyanate comprises a blend of 4,4'-diphenylmethane diisocyanate (MDI) with 2,4'-diphenylmethane diisocyanate.

12. (Original) The silane-terminated polyurethane composition of claim 2, wherein the aminosilane is selected from the group consisting of secondary aminosilanes having two methoxy groups, secondary aminosilanes having three methoxy groups, secondary aminosilanes having two ethoxy groups, secondary aminosilanes having three ethoxy groups, and combinations thereof.

13. (Original) The silane-terminated polyurethane composition of claim 2, wherein the aminosilane is selected from the group consisting of bis(trimethoxysilylpropyl)amine, 3-ethylamino-2-methylpropyltrimethoxysilane, N-(n-butyl)-3-aminopropyltrimethoxysilane, and combinations thereof.

14. (Withdrawn) The silane-terminated polyurethane composition of claim 2, wherein the isocyanatosilane is selected from the group consisting of isocyanatosilanes having two methoxy groups, isocyanatosilanes having three methoxy groups, isocyanatosilanes having two ethoxy groups, isocyanatosilanes having three ethoxy groups, and combinations thereof.

15. (Withdrawn) The silane-terminated polyurethane composition of claim 2, wherein the isocyanatosilane comprises 3-isocyanatopropyltrimethoxysilane.

16. (Original) The silane-terminated polyurethane composition of claim 2, wherein the at least one polyol has a number average molecular weight in the range of about 500 to about 20000.

17. (Original) The silane-terminated polyurethane composition of claim 2, wherein the at least one polyol comprises a polypropylene glycol with a number average molecular weight in the range of about 4000 to about 12000, and wherein said polypropylene glycol has a degree of unsaturation of less than about 0.04 meq/g.

18. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one component selected from the group consisting of UV absorbers, antioxidants, stabilizers, mildewcides, biocides,

fungicides, fire and flame retardants, fillers, pigments, plasticizers, solvents, catalysts, adhesion promoters, flow and leveling additives, wetting agents, antifoaming agents, rheology modifiers, and mixtures thereof.

19. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one UV stabilizer selected from the group consisting of 2-(2'-hydroxyphenyl)benzotriazoles, 2-hydroxybenzophenones, esters of substituted and unsubstituted benzoic acids, acrylates, nickel compounds, sterically hindered amines, oxanilides, 2-(2-hydroxyphenyl)-1,3,5-triazines, and mixtures thereof.

20. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one antioxidant selected from the group consisting of alkylated monophenols, alkylthiomethylphenols, hydroquinones and alkylated hydroquinones, tocopherols, hydroxylated thiodiphenyl ethers, alkylidenebisphenols, O-, N- and S-benzyl compounds, hydroxybenzylated malonates, aromatic hydroxybenzyl compounds, triazine compounds, benzylphosphonates, acylaminophenols, esters of beta-(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid with mono- or polyhydric alcohols, esters of beta-(5-tert-butyl-4-hydroxy-3-methylphenyl)propionic acid with mono- or polyhydric alcohols, esters of beta-(3,5-dicyclohexyl-4-hydroxyphenyl)propionic acid with mono- or polyhydric alcohols, esters of 3,5-di-tert-butyl-4-hydroxyphenyl acetic acid with mono- or polyhydric alcohols, amides of beta-(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid, ascorbic acid and derivatives, aminic antioxidants, and mixtures thereof.

21. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one fungicide, mildewcide, or biocide selected from the group consisting of 4,4-dimethyloxazolidine, 3,4,4-trimethyloxazolidine, modified barium metaborate, potassium N-hydroxy-methyl-N-methyldithiocarbamate, 2-(thiocyanomethylthio) benzothiazole, potassium dimethyl dithiocarbamate, adamantane, N-(trichloromethylthio) phthalimide, 2,4,5,6-tetrachloroisophthalonitrile, orthophenyl phenol, 2,4,5-trichlorophenol, dehydroacetic

acid, copper naphthenate, copper octoate, organic arsenic, tributyl tin oxide, zinc naphthenate, copper 8-quinolinate, and mixtures thereof.

22. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one fire retardant selected from the group consisting of monoammonium phosphate, ammonium polyphosphate, melamine, melamine phosphate, melamine cyanurate, melamine polyphosphate, triphenyl phosphate, tricresyl phosphate, tributyl phosphate, tri(2-chloroethyl)phosphate, dimethyl methyl phosphonate, zinc borate, expandable graphite, exfoliated graphite, acid treated natural graphite flakes, antimony and halogen containing compounds, and mixtures thereof.

23. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one filler selected from the group consisting of organic fibers, inorganic fibers, rubber particles, cork particles, carbon black, titanium dioxide, glass, crushed glass, glass spheres, iron particles, quartz, silica, amorphous precipitated silica, hydrophilic fumed silica, hydrophobic fumed silica, kaolin, mica, diatomaceous earth, talc, zeolites, clays, aluminum hydroxide, sulfates, aluminum sulfate, barium sulfate, calcium carbonate, dolomite, calcium sulfate, barytes, limestone, wollastonite, perlite, flint powder, kryolite, alumina, alumina trihydrate, polymer granules, polymer powders, granulated or micronized polyethylene, granulated or micronized polypropylene, melamine, polypropylene fibers, nylon fibers, zinc oxide, and mixtures thereof.

24. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one pigment selected from the group consisting of carbon black, titanium dioxide, barium sulfate, zinc oxide, zinc sulfide, basic lead carbonate, antimony trioxide, lithopones, iron oxides, graphite, luminescent pigments, zinc yellow, zinc green, ultramarine, manganese black, antimony black, manganese violet, Paris blue, Schweinfurter green, sepia, gamboge, Cassel brown, toluidine red, para red, Hansa yellow, indigo, azo dyes, anthraquinonoid and indigoid dyes, dioxazine, quinacridone, phthalocyanine, isoindolinone, and metal complex pigments, and mixtures thereof.

25. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one plasticizer selected from the group consisting of phthalic acid esters, adipic acid esters, sulfonic acid esters, and mixtures thereof.

26. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one solvent selected from the group consisting of aliphatic hydrocarbons, aromatic hydrocarbons, esters, ethers, ketones, and mixtures thereof.

27. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one catalyst selected from the group consisting of dibutyltin dilaurate, dibutyltin diacetate, stannous octoate, stannous octoate/laurylamine, dibutyltin bis(acetylacetonate), dibutyltin dichloride, dibutyltin bis(2-ethylhexyl mercaptoacetate), monobutyltin tris(2-ethylhexyl mercaptoacetate), butyltin trichloride, and mixtures thereof.

28. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one flow and leveling additive, wetting agent, or antifoaming agent selected from the group consisting of silicones, modified silicones, hydrocarbons, polyacrylates, fluorosurfactants, and mixtures thereof.

29. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one adhesion promoter selected from the group consisting of 3-aminopropyltrimethoxysilane, 3-aminopropyltriethoxysilane, 3-mercaptopropyltrimethoxysilane, 3-mercaptopropyltriethoxysilane, 1-[3-(trimethoxysilyl)propyl]urea, 1-[3-(triethoxysilyl)propyl]urea, [3-(2-aminoethylamino)propyl]trimethoxysilane, [3-(2-aminoethylamino)propyl]triethoxysilane, 3-glycidyloxypropyl-trimethoxysilane, 3-glycidyloxypropyl-triethoxysilane, 2-(3,4-epoxycyclohexyl)ethyl-trimethoxysilane, 2-(3,4-epoxycyclohexyl)ethyl-triethoxysilane, 3-(phenylamino)propyl-trimethoxysilane, 3-(phenylamino)propyl-triethoxysilane, bis[3-(trimethoxysilyl)propyl]amine, bis[3-(triethoxysilyl)propyl]amine, 3-aminopropyl-methyldimethoxysilane, 3-aminopropyl-methyldiethoxysilane, 3-mercaptopropyl-methyldimethoxysilane, 3-mercaptopropyl-

methyldiethoxysilane, [3-(2-aminoethylamino)propyl]methyldimethoxysilane, [3-(2-aminoethylamino)propyl]methyldiethoxysilane, 3-glycidoxypropyl methyldimethoxysilane, 3-glycidoxypropyl-methyldiethoxysilane, and mixtures thereof.

30. (Original) The silane-terminated polyurethane composition of claim 2, wherein the reaction product additionally comprises at least one rheology modifier selected from the group consisting of polyureas, fumed silica, hydroxyethyl cellulose, hydroxypropyl cellulose, polyamide waxes, modified castor oil, clay intercalated with organic cations, and mixtures thereof.

31. (Currently Amended) A multicomponent formulation comprising:

a) at least one of:

i) a silane-terminated polyurethane prepolymer component comprising a prepolymer reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of about 1.1:1 to about 2:1, said prepolymer reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; or

ii) a silane-terminated polyurethane prepolymer component comprising a prepolymer reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of about 0.5:1 to about 0.9:1, said

prepolymer reaction product terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1;

b) at least one monomeric diisocyanate fully reacted with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; and

c) optionally at least one of a polyether trisilane component, a polyether tetrasilane component, or a low molecular weight silane ~~adduct comprising at least one of a trisilane adduct or a tetrasilane~~ adduct;

wherein when components a, b, and optionally c are combined, a silane-terminated polyurethane reaction product is formed that has a tensile strength of about 4 MPa or greater and an elongation of about 200% or greater.

32. (Withdrawn) The multicomponent formulation of claim 31, wherein the mercaptosilane comprises (3-mercaptopropyl)trimethoxysilane.

33. (Withdrawn) The multicomponent formulation of claim 31, wherein the polyether trisilane component comprises at least one of:

a) the reaction product of at least one polyether triol terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; or

b) the multifunctional reaction product of at least one polyether triol terminated with at least one diisocyanate with a mole ratio of isocyanate groups to hydroxy groups of about 1.5:1 to about 2:1, said multifunctional reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1.

34. (Withdrawn) The multicomponent formulation of claim 31, wherein the polyether tetrasilane component comprises at least one of:

a) the reaction product of at least one polyether tetraol terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; or

b) the multifunctional reaction product of at least one polyether tetraol terminated with at least one diisocyanate with a mole ratio of isocyanate groups to hydroxy groups of about 1.5:1 to about 2:1, said multifunctional reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

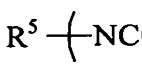
wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1.

35. (Original) The multicomponent formulation of claim 31, wherein the low molecular weight silane adduct comprises the reaction product of at least one of:

a) i) at least one of $HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or

$R^7\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$ and

ii) at least one of:



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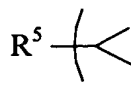

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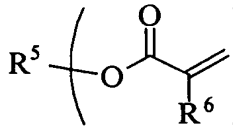
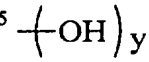
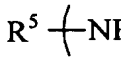


;

b)  and $OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$;

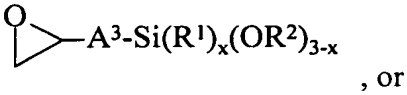
c) at least one of:

i)  , or

$[(R^2O)_{3-x}(R^1)_xSi\text{-}A^1\text{-}]_2NH$, and

ii) at least one of:

$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$,



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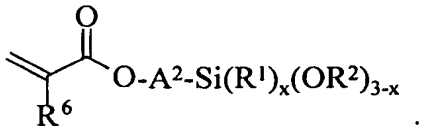
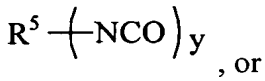


;

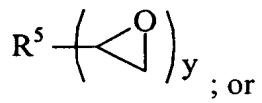
d) i) $[(R^2O)_{3-x}(R^1)_xSi\text{-}A^1\text{-}]_2NH$ and

ii) a diisocyanate;

e) i) a polyether triamine and ii) at least one of:



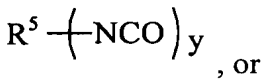
, or



; or

f) at least one of:

i) diethylenetriamine or triethylenetetramine, and ii) at least one of:



, or

;

wherein A^2 represents a C_1 to C_6 linear, or branched alkylene group; A^3 represents a C_1 to C_{10} linear, branched or cyclic alkylene group

optionally interrupted with one or more ether oxygen atoms; R^5 represents a branched aliphatic hydrocarbon residue, a branched aliphatic ether residue, or an alkyl-substituted isocyanurate residue; R^6 represents H or a CH_3 group; R^7 represents H, a C_1 to C_{10} alkyl group, a group having the formula $-A^1-Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)-CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; x is 0 or 1; and y is 3 or 4.

36. (Original) The multicomponent formulation of claim 31, wherein the at least one polyol is selected from the group consisting of polyether polyols, polyester polyols, and combinations thereof.

37. (Original) The multicomponent formulation of claim 31, wherein the at least one polyol is selected from the group consisting of polypropylene glycols, polytetramethylene glycols, polyoxyalkylene diols and triols, polycaprolactone diols and triols, and combinations thereof.

38. (Original) The multicomponent formulation of claim 31, wherein the at least one polyol is selected from the group consisting of polyethylene glycols, polypropylene glycols, polytetramethylene glycols, polyethers prepared by the copolymerization of cyclic ethers selected from the group consisting of ethylene oxide, propylene oxide, trimethylene oxide, tetrahydrofuran, and mixtures of these cyclic ethers, with aliphatic polyols selected from the group consisting of ethylene glycol, 1,3-butanediol, diethylene glycol, dipropylene glycol, 1,2-propylene glycol, l,3-propylene glycol, 1,4-butylene glycol, and mixtures of these polyols, and combinations selected from this group of glycols and polyethers.

39. (Original) The multicomponent formulation of claim 31, wherein each diisocyanate is selected from the group consisting of hexamethylene diisocyanate (HDI), 4,4'-diphenylmethane diisocyanate (MDI), 2,4'-diphenylmethane diisocyanate, blends of 4,4'-diphenylmethane diisocyanate (MDI) with 2,4'-diphenylmethane diisocyanate, 2,4-toluene diisocyanate (TDI), 2,6-toluene diisocyanate, blends of 2,4-toluene diisocyanate (TDI) with 2,6-toluene diisocyanate, 1-isocyanato-3,3,5-trimethyl-

5-isocyanatomethylcyclohexane (IPDI), dicyclohexylmethane-4,4'-diisocyanate, and combinations thereof.

40. (Original) The multicomponent formulation of claim 31, wherein each diisocyanate comprises a blend of 4,4'-diphenylmethane diisocyanate (MDI) with 2,4'-diphenylmethane diisocyanate.

41. (Original) The multicomponent formulation of claim 31, wherein the aminosilane is selected from the group consisting of secondary aminosilanes having two methoxy groups, secondary aminosilanes having three methoxy groups, secondary aminosilanes having two ethoxy groups, secondary aminosilanes having three ethoxy groups, and combinations thereof.

42. (Original) The multicomponent formulation of claim 31, wherein the aminosilane is selected from the group consisting of bis(trimethoxysilylpropyl)amine, 3-ethylamino-2-methylpropyltrimethoxysilane, N-(n-butyl)-3-aminopropyltrimethoxysilane, and combinations thereof.

43. (Withdrawn) The multicomponent formulation of claim 31, wherein the isocyanatosilane is selected from the group consisting of isocyanatosilanes having two methoxy groups, isocyanatosilanes having three methoxy groups, isocyanatosilanes having two ethoxy groups, isocyanatosilanes having three ethoxy groups, and combinations thereof.

44. (Withdrawn) The multicomponent formulation of claim 31, wherein the isocyanatosilane comprises 3-isocyanatopropyltrimethoxysilane.

45. (Original) The multicomponent formulation of claim 31, wherein the at least one polyol has a number average molecular weight in the range of about 500 to about 20000.

46. (Original) The multicomponent formulation of claim 31, wherein the at least one polyol comprises a polypropylene glycol with a number average molecular weight in the range of about 4000 to about 12000, and wherein said polypropylene glycol has a degree of unsaturation of less than about 0.04 meq/g.

47. (Original) The multicomponent formulation of claim 31, further comprising at least one component selected from the group consisting of UV absorbers, antioxidants, stabilizers, mildewcides, biocides, fungicides, fire and flame retardants, fillers, pigments, plasticizers, solvents, catalysts, adhesion promoters, flow and leveling additives, wetting agents, antifoaming agents, rheology modifiers, and mixtures thereof.

48. (Original) The multicomponent formulation of claim 31, further comprising at least one UV stabilizer selected from the group consisting of 2-(2'-hydroxyphenyl)benzotriazoles, 2-hydroxybenzophenones, esters of substituted and unsubstituted benzoic acids, acrylates, nickel compounds, sterically hindered amines, oxanilides, 2-(2-hydroxyphenyl)-1,3,5-triazines, and mixtures thereof.

49. (Original) The multicomponent formulation of claim 31, further comprising at least one antioxidant selected from the group consisting of alkylated monophenols, alkylthiomethylphenols, hydroquinones and alkylated hydroquinones, tocopherols, hydroxylated thiodiphenyl ethers, alkylidenebisphenols, O-, N- and S-benzyl compounds, hydroxybenzylated malonates, aromatic hydroxybenzyl compounds, triazine compounds, benzylphosphonates, acylaminophenols, esters of beta-(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid with mono- or polyhydric alcohols, esters of beta-(5-tert-butyl-4-hydroxy-3-methylphenyl)propionic acid with mono- or polyhydric alcohols, esters of beta-(3,5-dicyclohexyl-4-hydroxyphenyl)propionic acid with mono- or polyhydric alcohols, esters of 3,5-di-tert-butyl-4-hydroxyphenyl acetic acid with mono- or polyhydric alcohols, amides of beta-(3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid, ascorbic acid and derivatives, aminic antioxidants, and mixtures thereof.

50. (Original) The multicomponent formulation of claim 31, further comprising at least one fungicide, mildewcide, or biocide selected from the group consisting of 4,4-dimethyloxazolidine, 3,4,4-trimethyloxazolidine, modified barium metaborate, potassium N-hydroxy-methyl-N-methyldithiocarbamate, 2-(thiocyanomethylthio) benzothiazole, potassium dimethyl dithiocarbamate, adamantane, N-(trichloromethylthio) phthalimide, 2,4,5,6-tetrachloroisophthalonitrile, orthophenyl phenol, 2,4,5-trichlorophenol, dehydroacetic acid, copper naphthenate, copper

octoate, organic arsenic, tributyl tin oxide, zinc naphthenate, copper 8-quinolinate, and mixtures thereof.

51. (Original) The multicomponent formulation of claim 31, further comprising at least one fire retardant selected from the group consisting of monoammonium phosphate, ammonium polyphosphate, melamine, melamine phosphate, melamine cyanurate, melamine polyphosphate, triphenyl phosphate, tricresyl phosphate, tributyl phosphate, tri(2-chloroethyl)phosphate, dimethyl methyl phosphonate, zinc borate, expandable graphite, exfoliated graphite, acid treated natural graphite flakes, antimony and halogen containing compounds, and mixtures thereof.

52. (Original) The multicomponent formulation of claim 31, further comprising at least one filler selected from the group consisting of organic fibers, inorganic fibers, rubber particles, cork particles, carbon black, titanium dioxide, glass, crushed glass, glass spheres, iron particles, quartz, silica, amorphous precipitated silica, hydrophilic fumed silica, hydrophobic fumed silica, kaolin, mica, diatomaceous earth, talc, zeolites, clays, aluminum hydroxide, sulfates, aluminum sulfate, barium sulfate, calcium carbonate, dolomite, calcium sulfate, barytes, limestone, wollastonite, perlite, flint powder, kryolite, alumina, alumina trihydrate, polymer granules, polymer powders, granulated or micronized polyethylene, granulated or micronized polypropylene, melamine, polypropylene fibers, nylon fibers, zinc oxide, and mixtures thereof.

53. (Original) The multicomponent formulation of claim 31, further comprising at least one pigment selected from the group consisting of carbon black, titanium dioxide, barium sulfate, zinc oxide, zinc sulfide, basic lead carbonate, antimony trioxide, lithopones, iron oxides, graphite, luminescent pigments, zinc yellow, zinc green, ultramarine, manganese black, antimony black, manganese violet, Paris blue, Schweinfurter green, sepia, gamboge, Cassel brown, toluidine red, para red, Hansa yellow, indigo, azo dyes, anthraquinonoid and indigoid dyes, dioxazine, quinacridone, phthalocyanine, isoindolinone, and metal complex pigments, and mixtures thereof.

54. (Original) The multicomponent formulation of claim 31, further comprising at least one plasticizer selected from the group consisting of phthalic acid esters, adipic acid esters, sulfonic acid esters, and mixtures thereof.

55. (Original) The multicomponent formulation of claim 31, further comprising at least one solvent selected from the group consisting of aliphatic hydrocarbons, aromatic hydrocarbons, esters, ethers, ketones, and mixtures thereof.

56. (Original) The multicomponent formulation of claim 31, further comprising at least one catalyst selected from the group consisting of dibutyltin dilaurate, dibutyltin diacetate, stannous octoate, stannous octoate/laurylamine, dibutyltin bis(acetylacetonate), dibutyltin dichloride, dibutyltin bis(2-ethylhexyl mercaptoacetate), monobutyltin tris(2-ethylhexyl mercaptoacetate), butyltin trichloride, and mixtures thereof.

57. (Original) The multicomponent formulation of claim 31, further comprising at least one flow and leveling additive, wetting agent, or antifoaming agent selected from the group consisting of silicones, modified silicones, hydrocarbons, polyacrylates, fluorosurfactants, and mixtures thereof.

58. (Original) The multicomponent formulation of claim 31, further comprising at least one adhesion promoter selected from the group consisting of 3-aminopropyltrimethoxysilane, 3-aminopropyltriethoxysilane, 3-mercaptopropyltrimethoxysilane, 3-mercaptopropyltriethoxysilane, 1-[3-(trimethoxysilyl)propyl]urea, 1-[3-(triethoxysilyl)propyl]urea, [3-(2-aminoethylamino)propyl]trimethoxysilane, [3-(2-aminoethylamino)propyl]triethoxysilane, 3-glycidyloxypropyl-trimethoxysilane, 3-glycidyloxypropyl-triethoxysilane, 2-(3,4-epoxycyclohexyl)ethyl-trimethoxysilane, 2-(3,4-epoxycyclohexyl)ethyl-triethoxysilane, 3-(phenylamino)propyl-trimethoxysilane, 3-(phenylamino)propyl-triethoxysilane, bis[3-(trimethoxysilyl)propyl]amine, bis[3-(triethoxysilyl)propyl]amine, 3-aminopropyl-methyldimethoxysilane, 3-aminopropyl-methyldiethoxysilane, 3-mercaptopropyl-methyldimethoxysilane, 3-mercaptopropyl-methyldiethoxysilane, [3-(2-aminoethylamino)propyl]methyldimethoxysilane, [3-(2-aminoethylamino)propyl]methyldiethoxysilane, 3-glycidoxypropyl methyldimethoxysilane, 3-glycidoxypropyl-methyldiethoxysilane, and mixtures thereof.

59. (Original) The multicomponent formulation of claim 31, further comprising at least one rheology modifier selected from the group consisting of polyureas, fumed

silica, hydroxyethyl cellulose, hydroxypropyl cellulose, polyamide waxes, modified castor oil, clay intercalated with organic cations, and mixtures thereof.

60. (Original) The multicomponent formulation of claim 31, wherein the reaction product has a tensile strength of about 10 MPa or greater.

61. (Original) The multicomponent formulation of claim 31, wherein the reaction product has an elongation of about 300% or greater.

62. (Currently Amended) A method for making a silane-terminated polyurethane composition comprising:

a) providing a prepolymer component, a monomeric component, and optionally at least one multifunctional component, wherein the prepolymer component comprises a silane-terminated polyurethane prepolymer, the monomeric component comprises a silane-terminated monomeric diisocyanate, and the optional multifunctional component comprises at least one of a trisilane, a [[or]] tetrasilane, or a silane adduct component; and

b) combining and reacting the prepolymer component, the monomeric component, and optionally the at least one multifunctional component to form a silane-terminated polyurethane reaction product;

wherein the silane-terminated polyurethane reaction product has a tensile strength of about 4 MPa or greater and an elongation of about 200% or greater.

63. (Original) The method of claim 62, further comprising applying the reaction product to a substrate.

64. (Original) The method of claim 63, wherein said applying is selected from the group consisting of spraying, brushing, rolling, squeegeeing, scraping, troweling, and combinations thereof.

65. (Original) The method of claim 63, wherein the substrate is selected from the group consisting of concrete, asphalt, stone, rubber, plastic, metal, and wood.

66.(Currently Amended) The method of claim 62, wherein:

a) the silane-terminated polyurethane prepolymer comprises at least one of:

i) a prepolymer reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of about 1.1:1 to about 2:1, said prepolymer reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; or

ii) a prepolymer reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of about 0.5:1 to about 0.9:1, said prepolymer reaction product terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; and

b) the silane-terminated monomeric diisocyanate comprises at least one monomeric diisocyanate fully reacted with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; and,

wherein the optional multifunctional component comprises at least one of:

A) a polyether trisilane component comprising at least one of:

i) the reaction product of at least one polyether triol terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; or

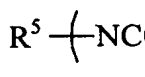
ii) the multifunctional reaction product of at least one polyether triol terminated with at least one diisocyanate with a mole ratio of isocyanate groups to hydroxy groups of about 1.5:1 to about 2:1, said multifunctional reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to



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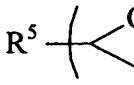

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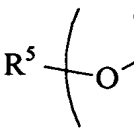

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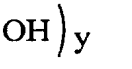
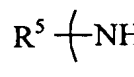
b)  and $OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$;

c) i) at least one of:

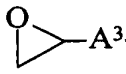


or

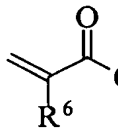
$[(R^2O)_{3-x}(R^1)_xSi\text{-}A^1\text{-}]_2NH$, and

ii) at least one of:

$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$,



, or



;

d) i) $[(R^2O)_{3-x}(R^1)_xSi\text{-}A^1\text{-}]_2NH$ and

ii) a diisocyanate;

e) i) a polyether triamine and ii) at least one of:

C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1;

B) a polyether tetrasilane component comprising at least one of:

i) the reaction product of at least one polyether tetraol terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; or

ii) the multifunctional reaction product of at least one polyether tetraol terminated with at least one diisocyanate with a mole ratio of isocyanate groups to hydroxy groups of about 1.5:1 to about 2:1, said multifunctional reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

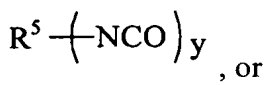
wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; or

C) a low molecular weight silane adduct component comprising the reaction product of at least one of:

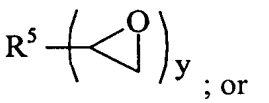
a) i) $HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or

$R^7\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$ and

ii) at least one of:



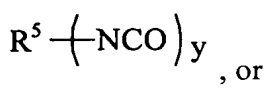
, or



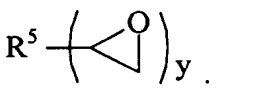
; or

f) at least one of:

i) diethylenetriamine or triethylenetetramine, and ii) at least one of:



, or



;

wherein A^2 represents a C_1 to C_6 linear, or branched alkylene group; A^3 represents a C_1 to C_{10} linear, branched or cyclic alkylene group optionally interrupted with one or more ether oxygen atoms; R^5 represents a branched aliphatic hydrocarbon residue, a branched aliphatic ether residue, or an alkyl-substituted isocyanurate residue; R^6 represents H or a CH_3 group; R^7 represents H, a C_1 to C_{10} alkyl group, a group having the formula $-A^1-Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)-CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; x is 0 or 1; and y is 3 or 4.

67. (Original) The method of claim 62, wherein the prepolymer component comprises a silane-terminated polyurethane prepolymer component comprising a prepolymer reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of about 0.5:1 to about 0.9:1, said prepolymer reaction product is further reacted with a monomeric diisocyanate, followed by termination with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1.

68. (Original) The method of claim 62, wherein the prepolymer component and monomeric component comprise a mixture of a silane-terminated polyurethane prepolymer and a silane-terminated monomeric diisocyanate, said mixture comprising at least one of:

a) a reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of greater than about 2:1, or

b) a reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxy groups of less than about 2:1 blended with additional monomeric diisocyanate to increase the mole ratio of isocyanate groups to hydroxy groups in the blend to greater than about 2:1;

said reaction product is terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1.

69. (Withdrawn) The method of claim 66, wherein the mercaptosilane comprises (3-mercaptopropyl)trimethoxysilane.

70. (Original) The method of claim 66, wherein the at least one polyol is selected from the group consisting of polyether polyols, polyester polyols, and combinations thereof.

71. (Original) The method of claim 66, wherein the at least one polyol is selected from the group consisting of polypropylene glycols, polytetramethylene glycols, polyoxyalkylene diols and triols, polycaprolactone diols and triols, and combinations thereof.

72. (Original) The method of claim 66, wherein the at least one polyol is selected from the group consisting of polyethylene glycols, polypropylene glycols, polytetramethylene glycols, polyethers prepared by the copolymerization of cyclic ethers selected from the group consisting of ethylene oxide, propylene oxide, trimethylene oxide, tetrahydrofuran, and mixtures of these cyclic ethers, with aliphatic polyols selected from the group consisting of ethylene glycol, 1,3-butanediol, diethylene glycol, dipropylene glycol, 1,2-propylene glycol, l,3-propylene glycol, 1,4-butylene glycol, and mixtures of these polyols, and combinations selected from this group of glycols and polyethers.

73. (Original) The method of claim 66, wherein the diisocyanate is selected from the group consisting of hexamethylene diisocyanate (HDI), 4,4'-diphenylmethane diisocyanate (MDI), 2,4'-diphenylmethane diisocyanate, blends of 4,4'-diphenylmethane diisocyanate (MDI) with 2,4'-diphenylmethane diisocyanate, 2,4-toluene diisocyanate (TDI), 2,6-toluene diisocyanate, blends of 2,4-toluene diisocyanate (TDI) with 2,6-toluene diisocyanate, 1-isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane (IPDI), dicyclohexylmethane-4,4'-diisocyanate, and combinations thereof.

74. (Original) The method of claim 66, wherein the diisocyanate comprises a blend of 4,4'-diphenylmethane diisocyanate (MDI) with 2,4'-diphenylmethane diisocyanate.

75. (Original) The method of claim 66, wherein the aminosilane is selected from the group consisting of secondary aminosilanes having two methoxy groups, secondary aminosilanes having three methoxy groups, secondary aminosilanes having two ethoxy groups, secondary aminosilanes having three ethoxy groups, and combinations thereof.

76. (Original) The method of claim 66, wherein the aminosilane is selected from the group consisting of bis(trimethoxysilylpropyl)amine, 3-ethylamino-2-methylpropyltrimethoxysilane, N-(n-butyl)-3-aminopropyltrimethoxysilane, and combinations thereof.

77. (Withdrawn) The method of claim 66, wherein the isocyanatosilane is selected from the group consisting of isocyanatosilanes having two methoxy groups, isocyanatosilanes having three methoxy groups, isocyanatosilanes having two ethoxy groups, isocyanatosilanes having three ethoxy groups, and combinations thereof.

78. (Withdrawn) The method of claim 66, wherein the isocyanatosilane comprises 3-isocyanatopropyltrimethoxysilane.

79. (Original) The method of claim 66, wherein the at least one polyol has a number average molecular weight in the range of about 500 to about 20000.

80. (Original) The method of claim 66, wherein the at least one polyol comprises a polypropylene glycol with a number average molecular weight in the range of about 4000 to about 12000, and wherein said polypropylene glycol has a degree of unsaturation of less than about 0.04 meq/g.

81. (Original) The method of claim 62, wherein the reaction product has a tensile strength of about 10 MPa or greater.

82. (Original) The method of claim 62, wherein the reaction product has an elongation of about 300% or greater.